



INTERACTIVE TECHNOLOGIES GROUP, INC.

Innovative Approaches in Manpower

presented for



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The Challenge

- Client: A Global Defense Command
 - CONUS and OCONUS Units
 - Disparate Installation Configurations
 - Disparate Staffing and Procedures
 - Disparate Regulatory Authorities
- Objective: Dynamic Functional Models
 - Data Driven
 - Scientifically Based
 - Holistic in Scope

The Challenge

- Constraints
 - 67 Global Locations
 - No Travel Budget
 - Minimal Historical Data
 - Consensus
- Data Segmentation
 - 12 functional units
 - 6 installation configurations

Four Key Questions

- What do we produce?
- How do we produce it?
- How much do we produce?
- Who is producing it?

SPARRC™ Methodology

System

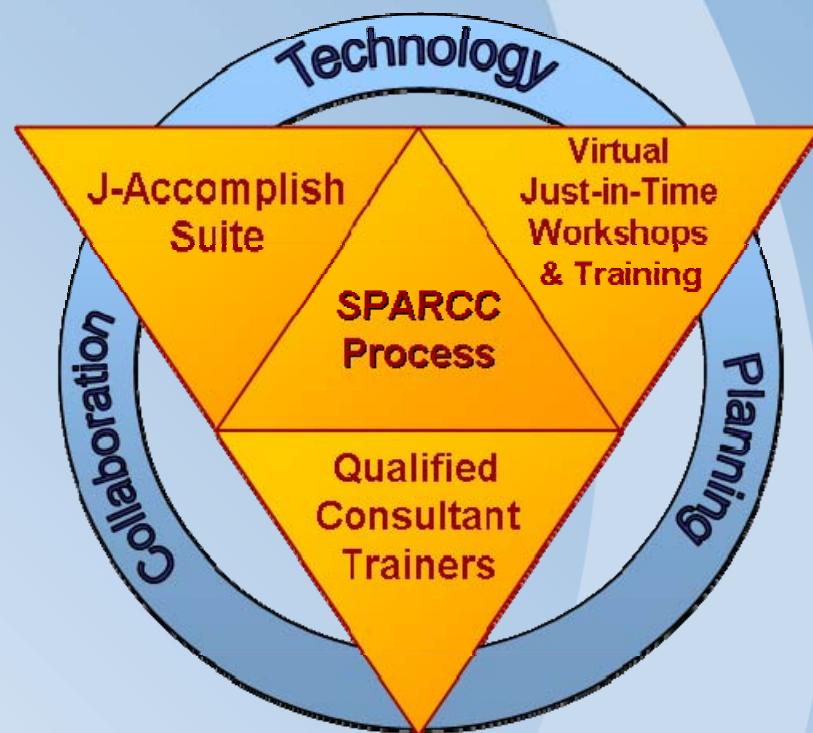
Process

Assessment

Re-engineering

Redesign

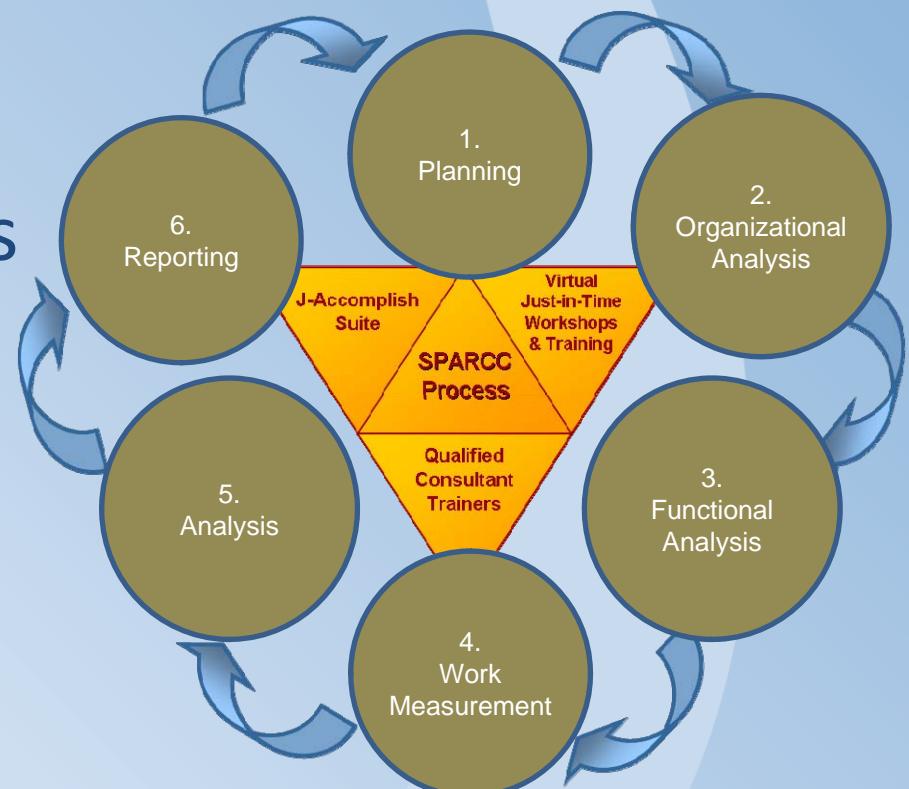
Comparison



SPARRC™ Methodology

Six Phases of SPARRC™

1. Study Planning
2. Organizational Analysis
3. Functional Analysis
4. Work Measurement
5. Analysis
6. Reporting



ITG's Technical Approach

- SPARRC™ Methodology
- Data Collection Virtual Workshops
 - Leverage J-Accomplish™ Technology
 - Maximize SME Participation
 - Immediate Results Validation
 - Minimize Workflow Interruption
 - Elimination of Travel Expense

ITG's Technical Approach

- Verified and Validated existing WBS
- Conducted Primary Measurement
 - 9 CONUS / 5 OCONUS units
 - (3) One-week sessions
- Developed Preliminary Analysis
- Conducted Secondary Measurement
 - 36 CONUS / 17 OCONUS units
 - (5) One-week sessions
- Performed C&R Workload Analysis

Enabling Technology



- Web-based suite of analytical tools
 - Speeds deployment and implementation
 - Enhances collaboration
 - Broader data collection reach
- Combines qualitative and quantitative
 - Real-time analysis
 - Historical, current and future views
- Fact-based decision making

JAWWS™ Functionality

- Patent-Pending Technical Innovations
 - WARPfactors™
 - JAWWS™ Optimizer
 - Process-Skills Competency Bridge
- Integrated analytics
- Scenario-based models

JAWWS™ Functionality

Basic Manpower Calculation:

$$\text{Hours} = \Sigma(\text{Output Frequency} * \text{Cycle Time})$$

or

$$Y = \Sigma (AF * CT)$$

Fractional FTE Calculation:

$$\text{FTEs} = \text{Hours} / \text{Manpower Availability Factor}$$

Or

$$\text{FTE} = Y / \text{MAF}$$

JAWWS™ Functionality

- WARPfactors™
 - Workload Accelerated Requirements Processing
 - Correlation and Regression Analysis
 - Support for multiple locations
 - Higher Granularity
 - Workload segmented by Work Outputs
 - Scenario Modeling
 - Generates required manpower
 - Estimates projected Work Output production
 - Leverages Skills Percentages

JAWWS™ Functionality

■ WARPfactors™

- Programmable Staffing Standards
 - Segmented by Work Output
 - Compound models

$$Y_c = \underline{\{a_1 + b_1x_1\}} + \underline{\{a_2 + b_2x_1 + c_2x_{12}\}} + \underline{\{x_2/(a_3 + b_3x_2)\}}$$

Output1

Linear

Output2

Parabolic

Output3

Ratio Curve

■ Segmentation Benefits

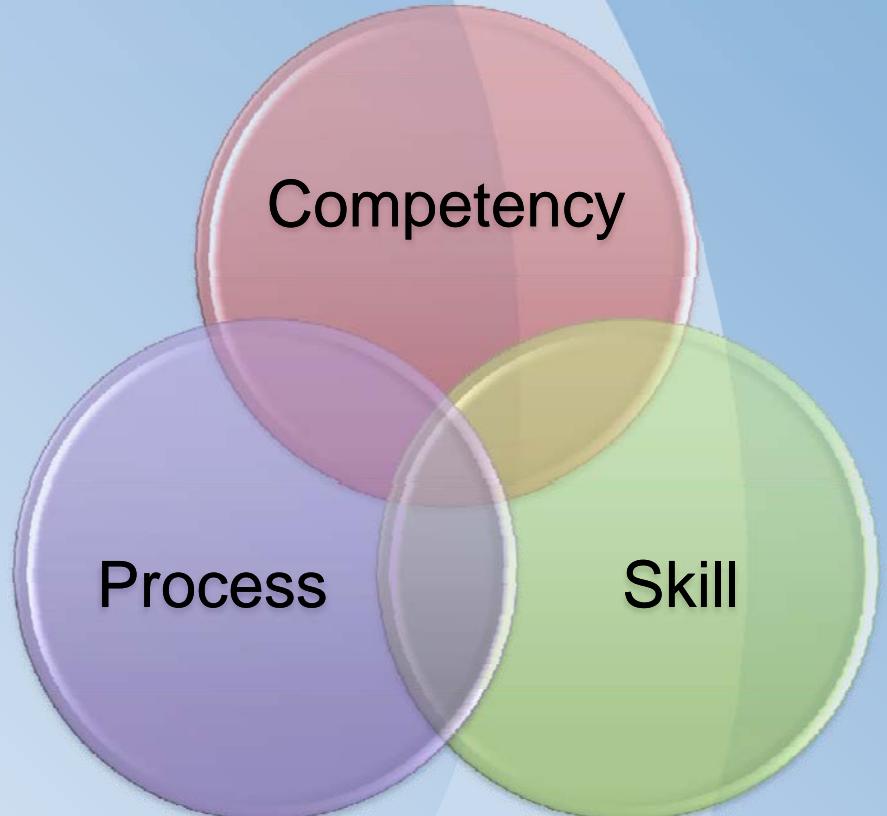
- Provides higher granularity
- Improves standards reusability

JAWWS™ Functionality

- JAWWS™ Optimizer
 - Central Concepts
 - Process Differentiation
 - Least Cost Skills
 - MIP Minimization
 - Objective equation formulation
 - Coefficients based on hourly rates
 - Integer/Non-integer based on contractibility
 - Constraints
 - Unique/Blended Skill-Process Relationship
 - Unskilled Processes

JAWWS™ Functionality

- Competency Bridge
 - Competencies act as a bridge between Processes and Skills
 - Informs the baseline Skills analysis
 - Informs the JAWWS™ Optimizer



The Results

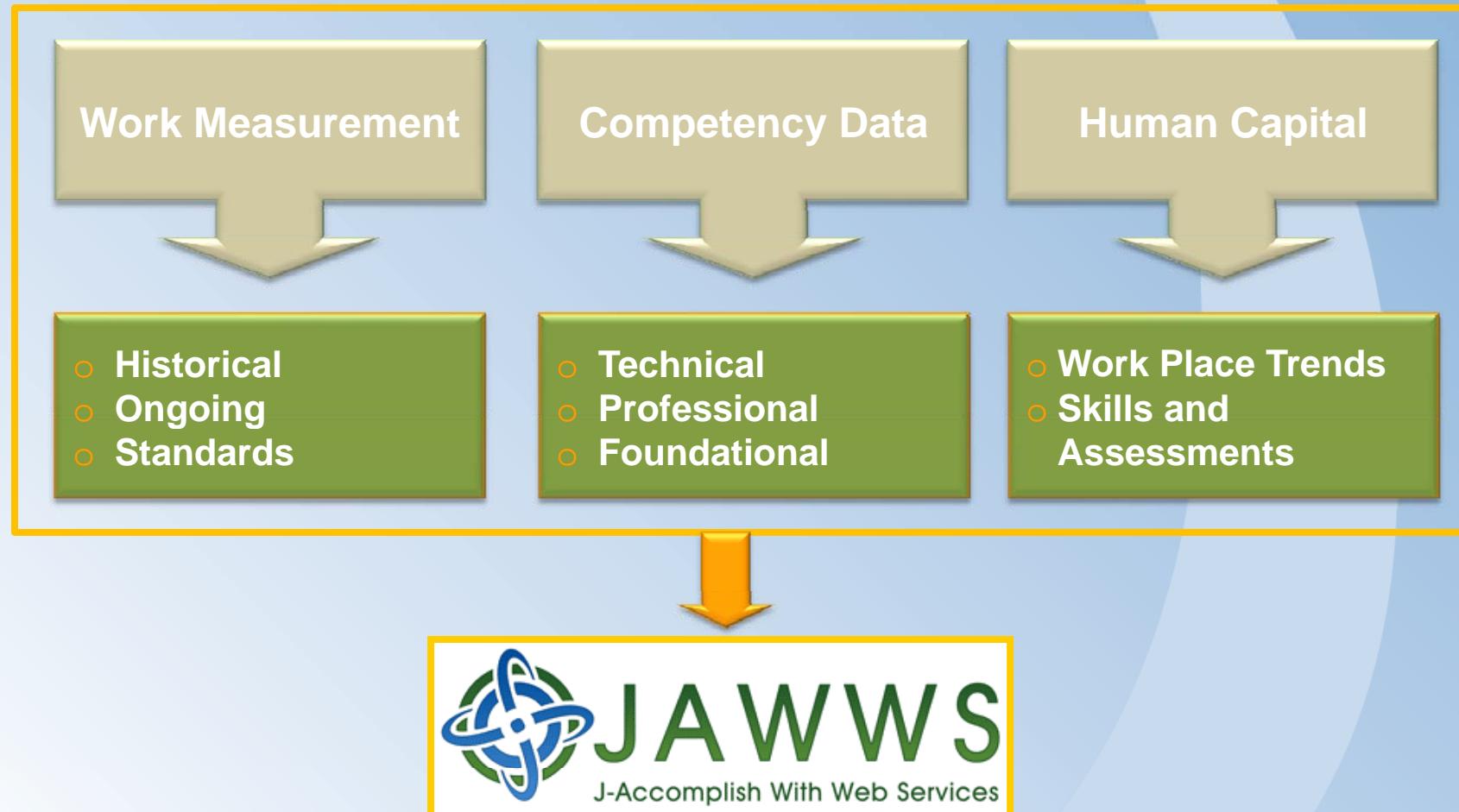
- Participation by over 300 SMEs
- 12 separate functional areas
- Functional Models Developed: 7
 - CONUS-Troop: 2
 - CONUS-Industrial: 1
 - CONUS-School: 1
 - CONUS-HQ: 1
 - OCONUS-Europe: 1
 - OCONUS-Pacific: 1

The Results

- Net Change: 178 additional FTE's
 - CONUS-Troop: -7
 - CONUS-Industrial: +109
 - CONUS-School: -28
 - CONUS-HQ: +4
 - OCONUS-Europe: +75
 - OCONUS-Pacific: +25
- Models currently being implemented

Backup

JAWWS™ Data Inputs



JAWWS™ Information Consumers



Manpower

Training

Human Resources

- Staffing Standards
- Manpower Costing
- Pareto Analysis

- Training Needs
- Process Improvement
- Best Practices

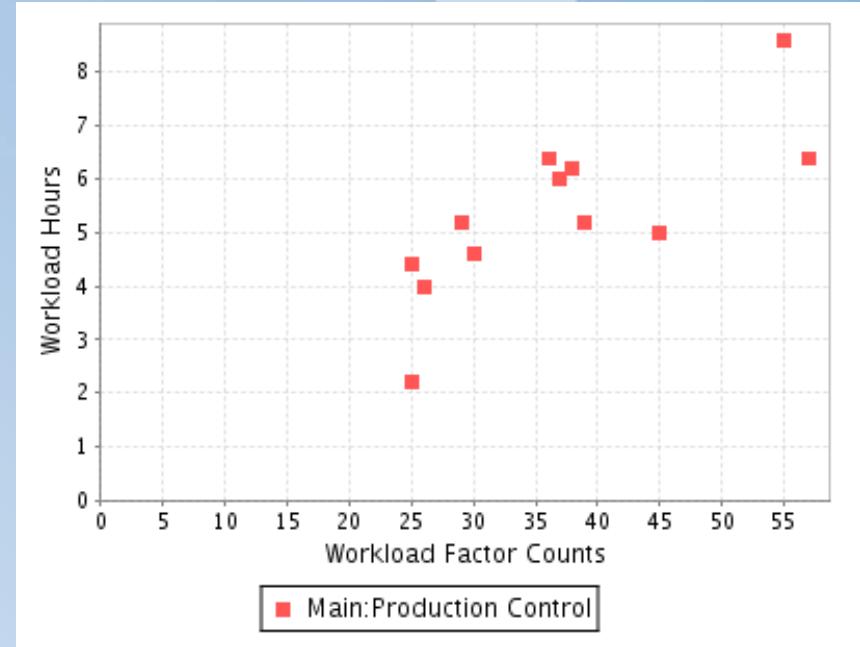
- Competency Gaps
- Hiring Priorities
- Staff Development

Enabling Technology



JAWWS™ Functionality

- WARPfactors™
 - Regression Types
 - Linear
 - Parabolic
 - Power Curve
 - Ratio Curve



Type	a	b	c	Syx	COD	COC	COV	FTest	TTest	Correlate
Linear	0.0077	0.0233		0.2979	0.9603	0.9800	0.0677	822.6660		<input checked="" type="radio"/>
Parabola	--	--	--	--	--	--	--	--	--	<input type="radio"/>
Ratio	49.7410	-0.0357		0.4422	0.9125	0.9553	0.1005	354.7786		<input type="radio"/>
PowerCurve	0.0165	1.0659		0.3219	0.9536	0.9765	0.0732	699.4913		<input type="radio"/>

JAWWS™ Functionality

Workload Scenario Report Filter

StaffingEquation: $Y = 14.2146 + 1.8148X_{17}$

Where:

- X_{17} = Location Offices

* Select Cost Center for Manpower Model:

... Make Selection Here ...

ITDAV [IT Support Department]
IT [Information Technology Support]



Please provide counts for the following Workload Factors...

* X_{17} Location Offices [OFF]

12

Definition:

Please provide counts for the following Work Outputs...

* IT: 1.2. A user desktop/laptop maintenance action performed. [UOM: Hour(s)]

120

Definition:

* IT: 1.3. A work order processed [UOM: Unit(s)]

213

Definition:

Generate Report



JAWWS™ Functionality

WorkOutput:IT: 1.1. A server maintenance action performed

Process	CycleTime	Frequency	
IT: 1.1.1.0.0. Perform server maintenance	1.0000	35.9922	
Skill	Hours	Skill%	CalcFTE
Database Support Analyst I [DSA-01]	35.9922	100.00	0.2482

WorkOutput:IT: 1.2. A user desktop/laptop maintenance action performed.

Process	CycleTime	Frequency	
IT: 1.2.1.0.0. Peform user desktop maintenance	1.0000	120.0000	
Skill	Hours	Skill%	CalcFTE
Database Support Analyst II [DSA-02]	60.0000	50.00	0.4138
Database Support Analyst I [DSA-01]	60.0000	50.00	0.4138

WorkOutput:IT: 1.3. A work order processed

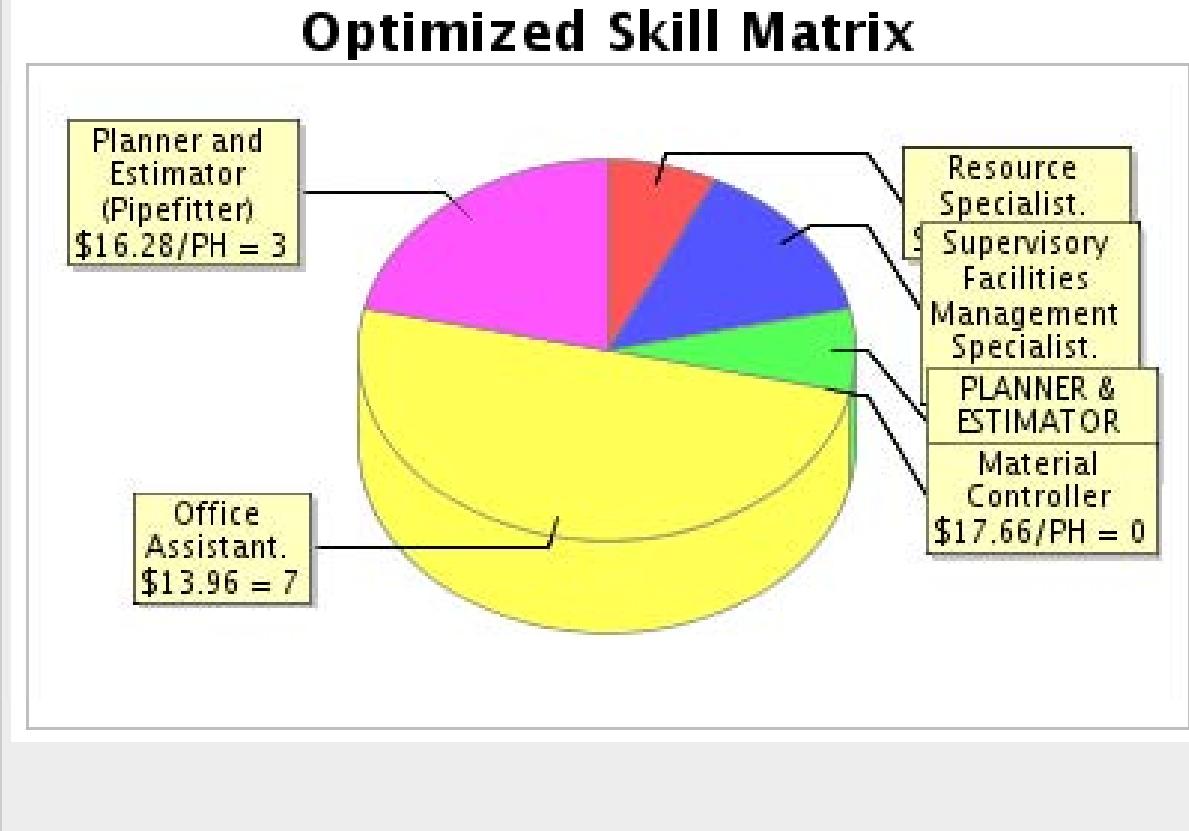
Process	CycleTime	Frequency	
IT: 1.3.1.0.0. Process a work order	10.0833	213.0000	
Skill	Hours	Skill%	CalcFTE
Database Support Analyst II [DSA-02]	1073.8715	50.00	7.4060
Database Support Analyst I [DSA-01]	1073.8715	50.00	7.4060

Skill	Hours	CalcFTE	WholeFTE	WholeCost
Database Support Analyst I [DSA-01]	1169.8637	8.0680	9	36605.25
Database Support Analyst II [DSA-02]	1133.8715	7.8198	8	34916.00
Total:	2303.7352	15.8878	17	71521.25

JAWWS™ Functionality

Optimization Results

Skill	Required Strength
Resource Specialist. \$20.98/ph	1.00
Supervisory Facilities Management Specialist. \$25.99	2.00
PLANNER & ESTIMATOR \$16.28/PH	1.00
Material Controller \$17.66/PH	0.00
Office Assistant. \$13.96	7.00
Planner and Estimator (Pipefitter) \$16.28/PH	3.00



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